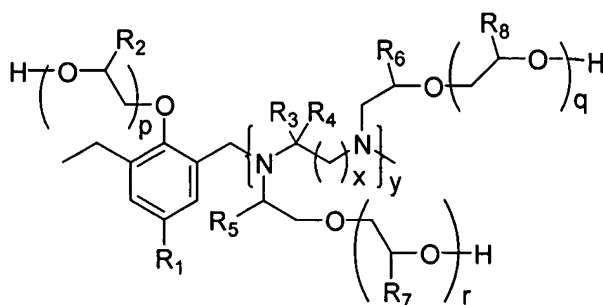


CLAIMS

1. An alkoxyated alkyphenol-formaldehyde-diamine polymer prepared by reacting 1 molar equivalent of one or more diamines, 1 to about 10 molar equivalents of one or more alkylphenols
5 and about 2 to about 14 molar equivalents of formaldehyde to form an alkylphenol-formaldehyde-diamine polymer and then reacting the alkylphenol-formaldehyde-diamine polymer with about 5 to about 3,500 molar equivalents of one or more alkylene oxides.
2. The alkoxyated alkylphenol-formaldehyde-diamine polymer of claim 1 wherein the alkylene
10 oxides comprise ethylene oxide and propylene oxide.
3. The alkoxyated alkylphenol-formaldehyde-diamine polymer of claim 2 wherein the ethylene oxide and propylene oxide are added in block fashion.
- 15 4. The alkoxyated alkylphenol-formaldehyde-diamine polymer of claim 3 wherein the ethylene oxide and propylene oxide are added in the sequence ethylene oxide-propylene oxide.
5. The alkoxyated alkylphenol-formaldehyde-diamine polymer of claim 3 wherein the ethylene
20 oxide and propylene oxide are added in the sequence ethylene oxide-propylene oxide-ethylene oxide.
6. The alkoxyated alkylphenol-formaldehyde-diamine polymer of claim 1 wherein the diamines are selected from the group consisting of ethylenediamine, triethyenetetramine, tetraethylenepentamine, pentaethylenehexamine, aminoethylpiperazine, 1,2-diaminocyclohexane, *o*-
25 phenylenediamine and *p*-phenylenediamine.
7. The alkoxyated alkylphenol-formaldehyde-diamine polymer of claim 3 wherein the alkylphenol-formaldehyde-diamine polymer is reacted with about 650 to about 800 molar equivalents of alkylene oxide.

8. The alkoxyated alkylphenol-formaldehyde-diamine polymer of claim 3 prepared by reacting about 1 molar equivalent of one or more alkylphenols, about 2 to about 7 molar equivalents of formaldehyde and about 1 molar equivalent of one or more diamines to form an alkylphenol-formaldehyde-diamine polymer and then reacting the alkylphenol-formaldehyde-diamine polymer with about 650 to about 800 molar equivalents of one or more alkylene oxides.

9. The alkoxyated alkylphenol-formaldehyde-diamine polymer of claim 1 comprising 1 to about 12 repeating units of formula

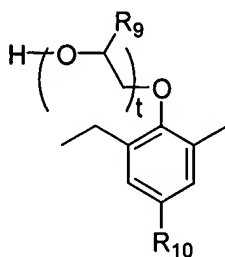


wherein R_1 is C_1 - C_{18} alkyl; R_2 , R_5 , R_6 , R_7 and R_8 are independently selected at each occurrence from H and CH_3 ; R_3 and R_4 are independently selected at each occurrence from H, C_1 - C_3 alkyl, aryl, hydroxy, alkoxy and halide; x is 1 to about 11; y is 1 to about 5; and p , q and r are independently about 5 to about 860.

10. The alkoxyated alkylphenol-formaldehyde-diamine polymer of claim 9 wherein R_3 and R_4 are H.

11. The alkoxyated alkylphenol-formaldehyde-diamine polymer of claim 9 wherein R_1 is C_5 - C_{12} alkyl.

12. The alkoxyated alkylphenol-formaldehyde-diamine polymer of claim 9 further comprising 1 to about 24 repeating units of formula



wherein R₉ is independently selected at each occurrence from H and CH₃, R₁₀ is C₁-C₁₈ alkyl and t is 0 to about 830.

13. A demulsifier composition for resolving water-in-oil emulsions comprising one or more alkoxyated alkylphenol-formaldehyde-diamine polymers according to claim 1.

10 14. A method of resolving a water-in-oil emulsion comprising adding to the emulsion an effective demulsifying amount of one or more alkoxyated alkylphenol-formaldehyde-diamine polymers according to claim 1.

15. The method of claim 14 wherein the water-in-oil emulsion is a crude oil emulsion.

16. The method of claim 14 wherein the crude oil emulsion is a refinery desalting emulsion.

17. The method of claim 14 wherein the crude oil emulsion is a crude oil production emulsion.